DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-016992
Date Inspected: 02-Sep-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
Location: Shanghai, China

CWI Name:	See Below		**CWI Present:**	☑ Yes	☐ No
Inspected CWI report:	☐ Yes	☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No	☐ N/A
			Delayed / Cancelled:	☐ Yes ☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG

Summary of Items Observed:
CWI Inspectors: ZPMC: Mr. Li Yang, ABF: Mr. Huang Wen Guang

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Segment Trial Assembly

ZPMC presented QA personnel with "Notification of Witness Inspection" document number 6389 that stated ZPMC was requesting Caltrans to perform visual and magnetic particle (MT) inspections of OBG segment 9DW to 9EW "Transverse Splice Welds temporary weld removal areas". This QA Inspector performed random visual and magnetic particle (MT) inspections of the exterior surfaces of welds OBW9A-007, -008, -009; OBW9C-008, -009, and -010. This QA Inspector observed OBG segment 9DW base material adjacent to weld OBW9C-009 had a linear indication that appeared to be approximately three millimeters long and ZPMC personnel performed minor grinding and removed the indication. This QA Inspector observed the base material adjacent on bottom plate BP154A adjacent to weld OBW9C-008 had a linear crack like indication that appeared to be approximately 20 millimeters long and ZPMC personnel ground this area to a depth of approximately 3 millimeters prior to removing the indication. This QA Inspector informed CWI Mr. Li Wang of this grind area and Mr. Liu Wang said ZPMC will obtain a critical weld repair document prior to welding this location. ZPMC personnel had previously performed MT of these weld removal areas and this QA Inspector informed ABF representative Mr. Kelvin

Chueng and ZPMC CWI Mr. Li Wang that this QA Inspector will be issuing an incident report to document ZPMC failure to observe this indication when they performed MT of these areas. Items observed on this date do not fully appear to comply with applicable contract documents. For additional information on these inspections see this QA Inspector's TL6028 Magnetic Particle Test Report.

This QA Inspector monitored welding of closed rib Production Monitoring Test (PMT) representing four OBG segment 13AE deck plates DP3175(PL3488A)-001 and DP3173(PL3386A)-001 which were welded using one single base plate starting at around 00:18 hours using gantry #1. This QA Inspector observed six ZPMC welders using welding procedure specification WPS-B-T-2342-U1(Urib)-5 using the gas metal arc welding process for the root pass and submerged arc welding process for the cover pass of partial penetration groove welds on six PMT closed rib welds at the same time. ZPMC has multiple welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. This QA Inspector observed a welding travel speed of approximately 530 mm per minute for the root passes and 516 mm per minute for the cover passes. As the welding commences, each of the welders is responsible for one of the welding heads. Welder Mr. Xu Guoyun, stencil 059443 completed the root pass of weld #1 with a welding current of approximately 390 amps and 30.2 volts and the cover pass welding current of approximately 690 amps and 24.5 volts. Welder Mr. Jiang Shuangchen, stencil 201788 completed the root pass of weld #2 with a welding current of approximately 380 amps and 30.7 volts and the cover pass welding current of approximately 695 amps and 25.1 volts. Welder Mr. Zhang Shaohui, stencil 059403 completed the root pass of weld #3 with a welding current of approximately 380 amps and 31.1 volts and the cover pass welding current of approximately 700 amps and 25.0 volts. Welder Mr. Xiang Huan Feng, stencil 59416 completed the root pass of weld #4 with a welding current of approximately 380 amps and 30. 5 volts and the cover pass welding current of approximately 695 amps and 24.8 volts. Welder Mr. Yang Yongzeng, stencil 059418 completed the root pass of weld #5 with a welding current of approximately 385 amps and 30.5 volts and the cover pass welding current of approximately 700 amps and 24.3 volts. Welder Mr. Song Yinshu, stencil 059421 completed the root pass of weld #6 with a welding current of approximately 375 amps and 30.8 volts and the cover pass welding current of approximately 700 amps and 25.5 volts. This QA Inspector performed random visual inspection of the weld joint fitups, root passes and cover passes and items observed appear to comply with project specifications. Following completion of the welding, ABF CWI Inspector Mr. Huang Wen Guang marked a 500 mm length on each of the welds as being the areas that are to be representative of this PMT test. This QA Inspector observed ZPMC UT Inspector Mr. Xu Wei performing ultrasonic inspections of each of the six welds. Following ZPMC's UT acceptance this QA Inspector marked a total of 15 locations where macroetch samples are to be obtained. ZPMC then cut and prepared macroetch samples. Mr. Huang Wen Guang visually inspected these macroetch samples and documented their acceptance on the ZPMC Production Monitoring Test Plate Inspection Report sheet dated September 3, 2010. This QA Inspector visually inspected each of the fifteen macroetch samples and items observed by the QA Inspector appear to comply with project specifications and the QA Inspector documented this inspection on the "Production Monitoring Test Plate Inspection Report".

WELDING INSPECTION REPORT

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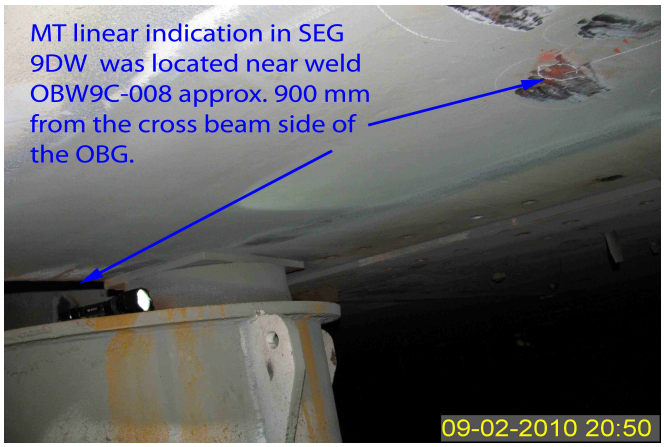

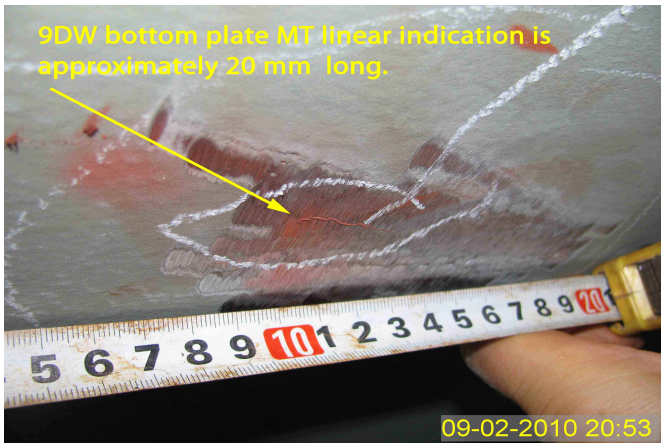

Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer